

How We Train Dolphins?

By

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Abstract

Through the internship program at Dolphin Quest Oahu (DQO), not only I have learned how to train dolphins but also I have learned the importance caring for animals with respect. Respecting marine mammal and protecting their environment can lead to marine conservation. At Dolphin Quest, we educate public, which leads to conservation efforts. Also, we are able to reach out to the misinformed such as animal activists. Because of the interactive programs at DQO, we can also raise revenue for animal care, research and conservation programs. During our interactive programs, people are offered an once-in-a-lifetime opportunity to swim with any one of our four Atlantic Bottlenose dolphins. Each person is given an intimate moment with the dolphins. How do the trainers train the dolphins to swim with the people and perform all types of behaviors? They use Operant Conditioning such as reinforcement and punishment.

Introduction

All over the world, many types of animals are trained and cared for by human hands for the purpose of research, education, entertainment, and partnerships with humans. There are many activist groups, as well as individuals, who feel that humans should not make any use of other animals for food, clothing, sport, display, or education. Some individuals within these groups attract much media attention, and generate some public support by charging the issue with emotional and graphic claims of mistreatment and commercial exploitation of individual animals. Nothing could be further from the truth in most oceanariums and zoos. In fact, we are in an age where cetaceans are significantly affected by severe ocean pollution, oil spills, entanglement in nets and discarded fishing gear, and over exploitation of fish resources by commercial fishing

nations. Here at Dolphin Quest we work to educate the public and call on people to help in the protection and conservation of our wildlife heritage.

My research project "How to train dolphin" is significant because I am able to incorporate the schoolwork I have learned over the years, such as experimental psychology (animal behavior) into a field experiment. Furthermore, I am relearning some of the specifics of Psychology such as operant conditioning (using positive reinforcement) from my hands on experience with the dolphins at Dolphin Quest. The scope of my project is not just limited to training the dolphins as entertainment and education for the public, but also to support a research project related to the conservation of marine mammals in wild.

The objective of my project is to observe the trainers' method of training specific behaviors learned by the dolphins, such as using a dorsal pack and eyecups, and then learn how to train those behaviors myself. To carry out the project, I will be using literary resources such as reading material and lecture notes which are created by Dolphin Quest personel as well as the personal experience and knowledge of accomplished dolphin trainers such as one of DQO's senior animal trainers, Billy Hurley, who has been in this business for decades. Billy maintains that "training increases physical and mental productivity and longevity in spices." He also states that the use of operant conditioning (positive reinforcement) and clear communication with the animal is the best way to build trust, as well as a solid partnership with the animal. Using positive reinforcement gives the trainer a means of control over the behavior of the animal. It tests on the simple principle that whenever something reinforces a particular activity of an organism, it increases the chances that the organism will repeat that behavior.

Methods and Materials

Animal training can most concisely be described as teaching. We teach the animals so that the animal fully understands its environment and what is being asked. This approach will reduce confusion and make for a healthier animal. How do we train a dolphin? Before I begin to train a dolphin I need to know the following three things: the *natural history* of a species; the *environment you are going to train in*; and the particular *individual's background*. The natural history of a species includes such information as where it lives, any seasonal need, social groupings and physiological needs. The dolphins are Atlantic Bottlenose dolphins, which live in shallow coastal waters. It is found throughout temperate and tropical waters, only areas not found are Polar Regions. The dolphins hunt in-groups and eat fish and shrimp; tend to catch what is in the area.

Knowing the environment you are going to train in means becoming aware of any existing exits, environmental dangers to animals, and positive things in the environment that you can use as potential for enrichment. Dolphin Quest Oahu is located at Kahala Mandarin Oriental where the dolphins live in a large lagoon that resembles a natural bay or inlet found in the wild. There are no environmental dangers to the animals in this lagoon, nor are there any ways in which they can exit; however, it has a lot of potential for enrichment, such as the rocks and the small fish (to play with). Lastly, a trainer must be familiar with the particular animal's background (see Figure 1), including its age, sex, historical phobias, prior aggressive issues, prior training history, social history, and what motivates the animal. For example, before a new trainer attempts to train Mahina, one of the two female dolphins at DQO, to do a new behavior in a shallow area of the lagoon, it

would be necessary to be aware of Mahina's dislike of shallow water, due to her having spent the bulk of her life in deep pools

Particular Individuals Background

	Mahina	Hiiaka	Hoku	Liho
Age	23	13	11	7
Sex	Female	Female	Male	Male
Historical Phobia	Dislike a shallow water	Swim along w/ guests (people)	Loud noise	Large people in the water
Prior Aggressive Issues	Tip over fish bucket	Shark swim around people	Bite people	Bite people
Prior Training, Social History	Trained @ SLP, Dominate	Born @ SLP, loves to show off her behaviors to people	Born in the lagoon, Liho is his brother	Trained @ SLP, Least dominant
What Motivates the Animal	Play and retrieve toys	New toys, novel behavior	Novel behaviors	Toys

Figure 1. Individual backgrounds of Dolphin Quest Oahu dolphins

To begin communication, trainers must first become significant to the animal. To do that, I have to pair myself with food. This allows my value to increase and start paving the way to successful training. To continue the communication process, I need a way to say "yes" to the animal. I do this by conditioning a bridge stimulus, or a bridge. A bridge can be audible: such as a whistle, a clicker, or even a verbal "good" or "OK"; tactile: a two-tap (using your hand) on the animal's head; or visual: pointing, or a single point to the animal. A bridge stimulus is bridging the time between when an animal does the correct behavior and when they are reinforced. The bridge is trained or conditioned utilizing classical conditioning. For example, if I pair the bridge with food, the bridge will start to represent reinforcement. When the bridge is given, I begin seeing the animal's anticipation for the reinforcement. Since all the DQO dolphins have learned the bridge stimulus, we no longer have to use classical conditioning. We use operant conditioning to allow for the animal to give a correct response and then receive reinforcement. At Dolphin Quest, we utilize four specific categories of reinforcement

(anything that increases the frequency of the behavior it follows) and punishment (anything that decreases the frequency of the behavior it follows) (Figure 2).

- **Positive Reinforcer**- adding something to an animal's environment, increasing the frequency of the behavior it follows. Ex: Giving a fish to the dolphin for performing a jump.
- **Negative Reinforcer**- removing something from an animal's environment that increases the frequency of the behavior it follows. Ex: Removing a foreign object from the water, so an animal will station.
- **Positive Punisher**- adding something to an animal's environment, that decreasing the frequency of the behavior it follows. Ex: An animal tries to bite a person's leg, the person simply pushes the animal away from it. (adding the person's hands to the environment),
- **Negative Punisher**- removing something from an animal's environment that decreases the frequency of the behavior it follows. Ex: Time out, taking yourself away and taking food away from the animal.

Figure 2. Categories of punishers and reinforcers

The positive reinforcers we use at DQO are *Primary* reinforcement and *Secondary* reinforcement. Primary reinforcement is anything an animal needs in order to survive, such as food, water, air, heat, cold, and reproduction. Secondary reinforcement is anything whose value is conditioned by pairing it with food, such as clapping, tactile encouragement, games, a bridge stimulus and toys. Dolphin Quest never uses physical punishment with their animals. There are arguments for using physical punishment, but using it can be detrimental to the trainer-animal relationship. The three types of punishment utilized in DQO interactions are: a Least Reinforcing Stimulus (LRS) which is a 3-5 second time out that says, "no, try again"; a Time Out (TO) which is anything from 5 seconds to 5 minutes; and an Extended Time Out (ETO) that is 5-15 minutes or can end a training session. If during an interaction aggression occurs, an ETO should be exercised.

In order to train the dolphins, a trainer must know what the animal values in order to motivate them. Motivation is about knowing the animal finds valuable, and providing those things in an effective manner. Training requires the animal handlers to utilize the necessary skills in order to keep their critters focused and inspired. There are certain

rules of training that cannot be broken: communicate well with your animal; you must be consistent; and the rules must be fair and predictable – always set an animal up where they cannot fail, but succeed.

Results

During the internship program, I learned several cues for behaviors, known in animals training as Sds (Stimulus Descriptives) including the Sds for hand stations, sonograms, bows (jumps), pectoral waves and chuffing. In order to use these cues, we have to put the animals in perfect positions where it is impossible for them to fail, and keep them motivated to interact with trainers. One of the main goals for my project is to train these dolphins and share the opportunities with guests. I began with learning a basic and a fundamental cue, the Sd for a hand station. This involved entering an area of relatively shallow water and putting my hand beneath the water, with my palm facing the dolphin. This asks the dolphin to simply rest its rostrum (chin) on my palm, which is its target. The criteria I am looking for is for the animal to remain calm while stationing on my hand, without pushing towards it or away from it, and keeping its dorsal fin out of the water. Quite often, the dolphins start to wiggle their bodies, push or swim away from the hand, or open their mouths. If this were to happen, I would simply remove my hand from the water and give them LRS (Least Response Stimulus). If the dolphin does well, I will reinforce the dolphin with either primary (fish) or secondary reinforcement (two taps on the dolphin's head or clapping my hand and saying "good job"). At first, I have no idea what the correct position is for the dolphin, or when to give an LRS; however, with the trainers' supervision, I have learned when the appropriate time is to bridge and reinforce.

Another cue I learned is for what's called a "sonogram" position for the dolphins, used by the trainers during an actual ultrasound check-up on the animal's internal organs, but most frequently it is used during the interactive programs to give the guests opportunities to touch the dolphins' body. This position has several steps. The first step involves getting the dolphin in a solid hand station. While maintaining a good hand station, I use my free hand to move towards one of the dolphin's pectoral flippers, which cues the dolphin to bring its flipper towards the hand (the dolphin is now rotating on its side). Next, I gently push the rostrum away from me while leading the dolphin's body toward me. Now the dolphin is sideways in the water and I hold the dolphin's tail in a way that allows the guests to touch the dolphin's body region, but also safely so that if the dolphin were to kick out of the position, the tail would not harm anyone. While the guests are touching the dolphin I have to make sure the dolphin's eye is above the water and its body is relaxed as part of the good criteria for the position. The criteria for this position is especially important in order to have the right criteria for an actual ultrasound.

I have learned a few other cues, such as asking for a vocal behavior - the "tickle" - tickling the top of the dolphin's rostrum area, which asks the dolphin to make a noise from its blowhole. Another cue is the "sneeze". When I tap the area in front of the blowhole, the dolphin exhales powerfully.

Discussion

The relationship between the trainer and the dolphins is built upon trust. A trainer will not be able to train dolphins without respect their respect. Even though dolphins are

social animals and thrive on human attention, their interaction with humans is always voluntary on the part of the dolphins.

At some point during the last full month of my internship, the dolphins began showing more interest in associating with each other rather than interacting with humans. This was thought to be due to the time of the year; or more specifically, their mating season. Some of the dolphins simply refused to separate from one another. After days of trouble-shooting, the trainers and the manager finally decided to cancel all the interactive programs for the day to give the dolphins some space and respect. I agreed with this decision because I think it is important to respect the needs of the dolphins, and to help maintain a good relationship with them. Many very important human-animal partnerships exist in a variety of scenarios: for example, search-and-rescue dogs, guide dogs, herding dogs, police horses, navy marine mammals, plow horses, messenger birds, and seals as lifeguards.

Some people believe that trained animals interact with people only if they can receive food. Captive dolphins jump because they will receive food after the behavior. That is not an only the reason why we train the animals. The trained animals show trainers a lot of interests, affections, and trust; even they do not receive a reward. To communicate or train the dolphins I have to be significant to them. The first step is to pair myself with food so that my value goes up when I feed the animal. Also, the animal will know that I am one of their caretakers and playmates. Sometimes, I play with the dolphins by passing a basketball back and forth with one of them. We occasionally use a fresh water hose to spray the dolphins, which seems to be a great source of enjoyment for them. During the time we do not use food, we just play around like little kids.

Evaluation of Learning

Through carrying out the internship and this project, I have gained a tremendous amount of knowledge relating to the dolphin training. Also, I discovered how much I would like to pursue my career goal as an animal trainer. I have enjoyed preparing their food for them, and find myself looking forward to seeing them every day. When I was collecting the data for this project, I was able to observe them and play with them. Inevitably, I developed quite an attachment for these beautiful creatures.

During the past five months, I have never worked as hard as I have worked during this internship. In addition to fulfilling my duties as a full-time intern at Dolphin Quest five days a week, I worked two days a week at Sea Life Park and continued on as a full-time international student at the University of Hawaii. Now that I am able to look back over the past five months, I realize I accomplished a lot of things. Mostly, I tolerated not having a day off.

Through it all, I developed better mental and physical strength. I also acquired many transferable skills such as handling multiple tasks, practicing public speaking, problem solving, working with at a team, and showing more enthusiasm in front of people. Among the co-workers at Dolphin Quest Oahu, teamwork is considered one of the most important thing in order to create a fun and an exciting environment. At the beginning of the internship program, I liked to work alone. However, I soon recognized that my independent working attitude wouldn't be tolerated in the facility. Working as a team is especially important since all the trainers need to be communicate each other about the dolphins' conditions, and in order that the guests be able to enjoy interacting with dolphins.

I think everybody needs close supervision when learning new things. Eventually I was comfortable to do some of the ,chores such as food prep, daily cleaning, and photography without needing help, after I receiving close supervision. However, I did not feel comfortable going in the water with the dolphins without supervision because you never know what is going to happen at any second. I did not want to put myself, or the dolphins, into any danger.

All of the interns were required to attend a mandatory lecture series three times a week. During these classes we learned many aspects about training dolphins. Because English is my second language, I had a hard time understanding some parts of the lectures. It was a lot easier for me to learn the material through the actual hands-on experience.

Acknowledgements

I would like to thank each one of the trainers at Dolphin Quest Oahu for giving me the opportunity to experience working with dolphins, and Brad Holmes, our manager, for giving me a job offer at a great facility. The trainers told us interns their experiences with dolphins, which gave me so much encouragement. Most of all, they became my good friends. Also, I appreciate the other interns; especially, my new friend, Lindsey. She gave me emotional support and taught me how to speak proper English to guests during the internship program. She got a job offer at Dolphin Quest as well.

I have special thankfulness for my boyfriend's parents. They provided my tuition, my rent, and even a car. But without their support, I could never have done this internship program or attended school in Hawaii. With all these peoples' help and support, I was able to pursue my dream job. And also, it always makes me happy to

· know that I have accomplished something in my life, giving me confidence in myself.

This is the first time in my life that I have done something so productive and has allowed me see myself grow so much.



OAHU

During your visit to the Kahala Mandarin Oriental, Hawaii we hope you will have the opportunity for a once in a lifetime experience with our dolphins. Dolphin Quest Oahu offers the following unique programs:

Kid's Quest for Knowledge

This program is for children 5 through 12 years of age. The 2-hour program offers an array of activities with education as the focal point. The dolphin portion of the program offers each child an opportunity to interact with these amazing animals in the comfort of the shallow waters for touching, feeding, and game playing. Other activities in this program include an interaction with the other wonderful animals in residence at the Kahala Mandarin, namely our stingrays, green sea turtles, and tropical reef fish. Daily at 9:30am/ \$150 tax included

Adult Dolphin Encounter

This 30-minute program is for individuals 13 years of age and older. While guests become acquainted with the Kahala dolphins in the shallow waters, the Dolphin Quest trainers share information about these animals and the environmental issues affecting them in the wild. Participants are then guided to the deeper portions of the lagoon to appreciate the grace and beauty of these bottlenose dolphins. Daily 2pm/ \$100 tax included

Adult Dolphin Adventure

The one-hour program is for individuals who are 13 years of age and older. This in-depth experience allows participants to further their knowledge of dolphins while interacting with these incredible creatures. The areas of research, play and enrichment, training, and husbandry are covered in this unique and informative hands-on encounter. Daily at 11am/ \$150

Program times are subject to change on a daily basis.

Prices are subject to change without notice.

Hotel guests may make reservations up to one year in advance. Non-Guests of the hotel may make reservations up to 2 months in advance (with the exception of peak seasons—summer and Christmas). A major credit card number is required to make reservations. When making a request for the children's program, please provide the name and age of the child.

Cancellation and Rescheduling Policy

Due to the popularity of our programs, the following cancellation and rescheduling policy will be applied to all confirmed reservations.

*All programs not cancelled/rescheduled at least 24 hours in advance will be charged in full to the guest room or credit card.

*Participants must be checked-in at the Dolphin Quest activities desk by no later than assigned check-in time, or the space may be given to a stand-by guest.

*To cancel or reschedule your reservation please call (808) 739-8918, or touch extension #8918 if you are calling from within the resort.

For more information please call (808) 739-8919. To make a reservation please call the Dolphin Quest Activity Desk at (808) 739-8918. Visit our website at www.dolphinquest.org



This shot is our dolphins at Dolphin Quest Oahu.
From left Mahina, Hoku, Liho and Hiiaka
This behavior is called "team bow"



These are the spring 2002 interns.
From left me, Becky, Lindsey, Alexis, and Gyle.







These three shots are the intimate moments w/ Liho
DQO provides these moments to our guests



I am feeding one of the two Hawaiian Green Sea turtles (Koa).

This feeding session is a part of Education program.



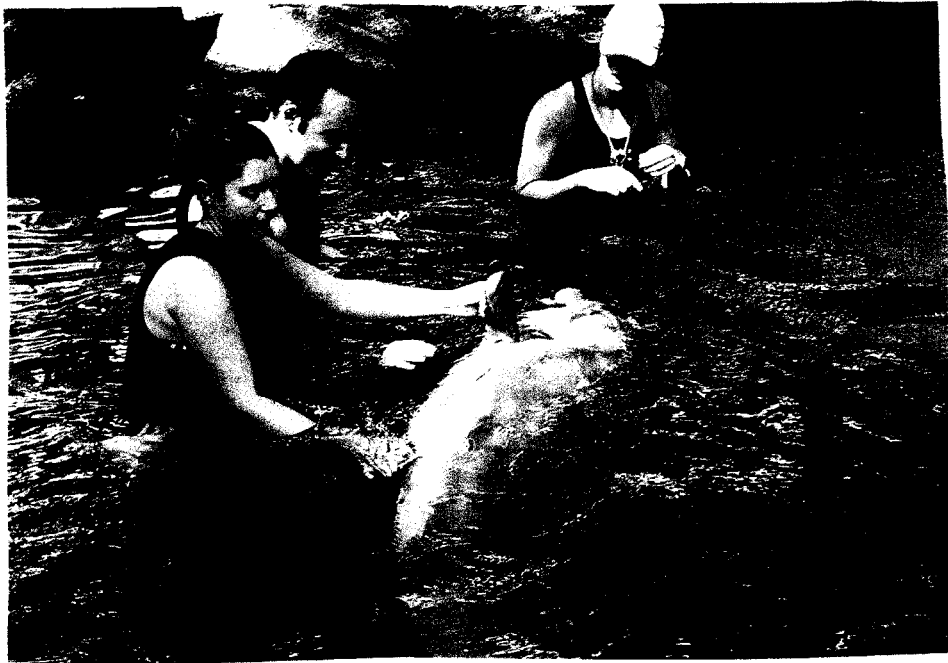
This is Mahina. We're not paying attention to her
But she is waiting for someone to get in the water and
play.

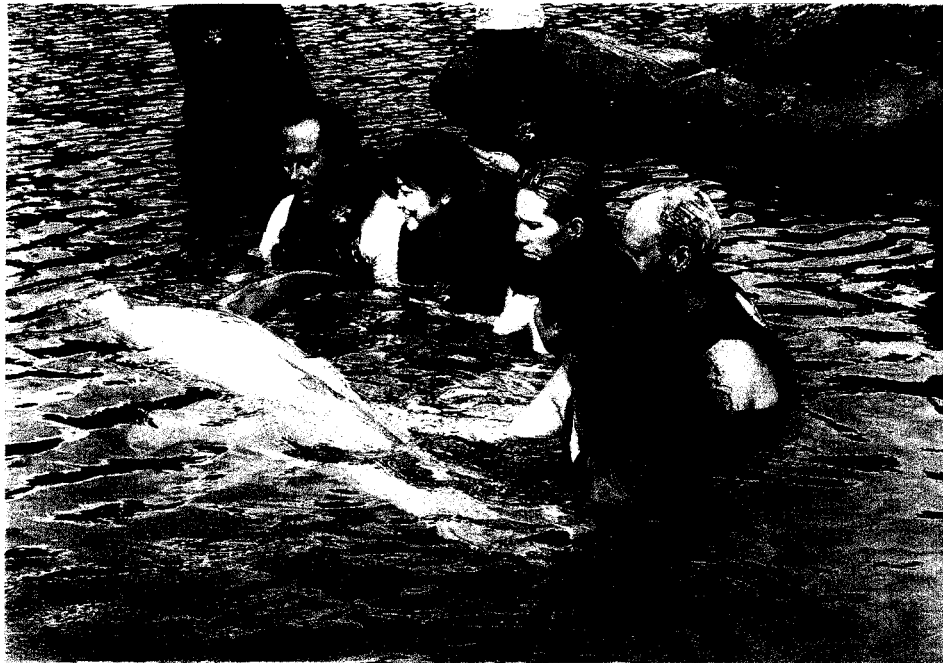


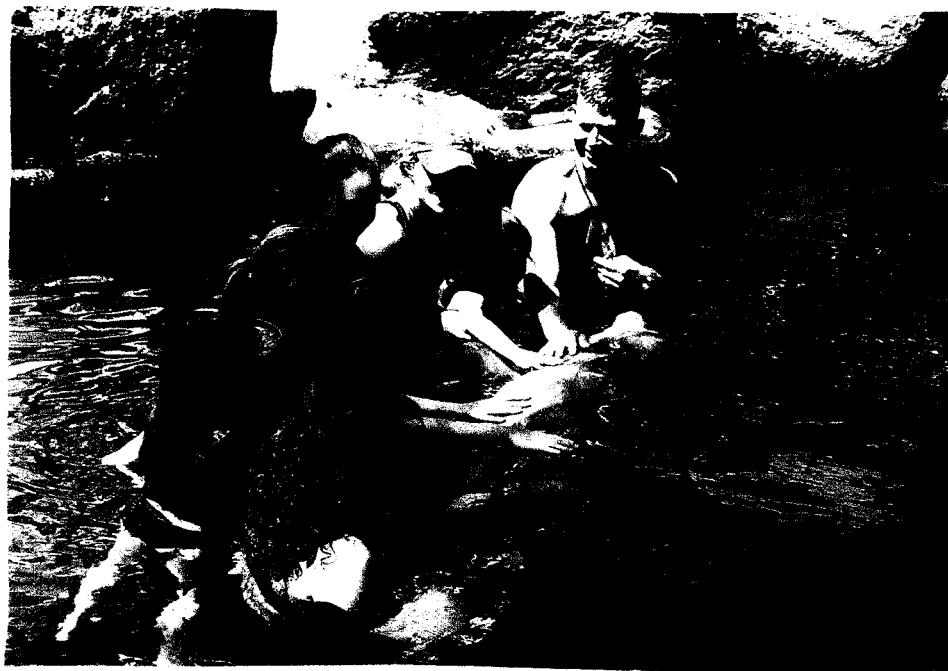
This position is called "station" position.
This is one of the interactive programs.

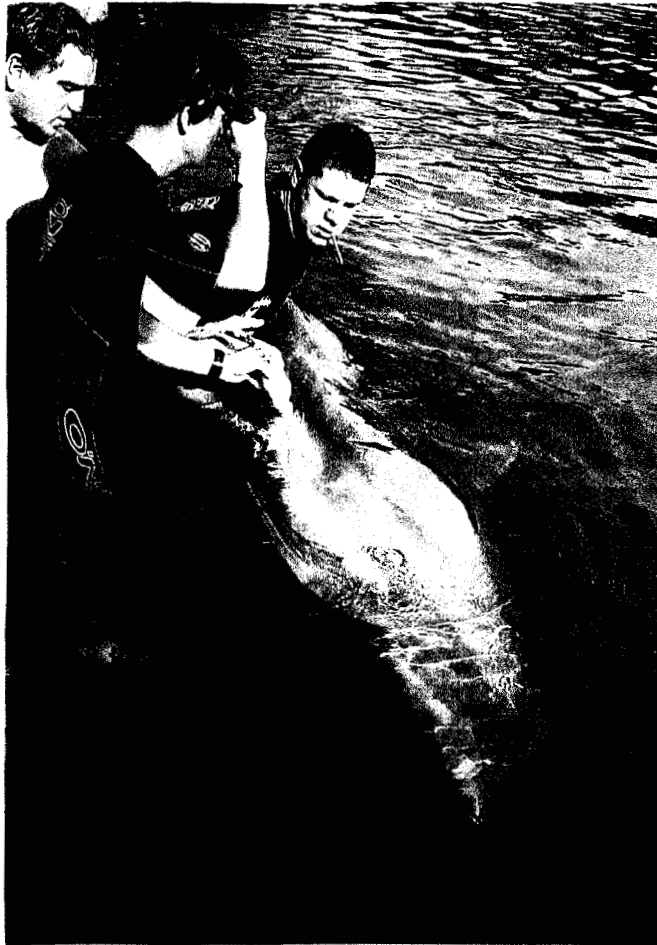


From the station position, it moves to "sonogram" position. Following are the steps.









Sonogram position is one of the medical behaviours of dolphins. They are using of an ultrasound to check the dolphin's internal organs. Also, can check sexual maturity.

